A new species of *Isophanes* (Caeciliidae, Psocoptera) from Natal.

by

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Isophanes capeneri spec. nov.

Colouration (in alcohol). Head various shades of brown. Vertex very dark, slightly paler between the eyes and the branches of the epicranial suture. Epicranial suture distinct, very darkly margined. Frons dark, with a darker median patch. Postclypeus of the same colour, darker still towards the anterior border. Labrum dark, palar laterally. Genae very dark. Eyes almost black. Ocelli pale. Antennae pale brown, each segment of the flagellum darker distally, the paler section decreasing in proportion to the darker in each segment from the proximal to the distal segments. Scape pale brown, pedicel slightly darker. Maxillary palpi brown, the terminal segment darker distally.

Thorax also of various shades of brown. Prothorax very pale. Mesonotum dark with parapsidal furrows pale, antedorsum darkening anteriorly. Metanotum as mesonotum but the furrows are paler. Meso- and metapleura brown.

Legs of prothorax with coxa and femur very pale brown, the latter slightly darker in the distal quarter. Tibia and tarsus slightly darker, second tarsal joint darker than the first. Mesothoracic legs coloured as those of the prothorax except for the coxa, which is darker. Metathoracic legs darker still in coxa and femur, otherwise coloured as other legs.

Fore-wings with membrane brown, veins slightly darker, some bordered by slightly paler membrane, especially in the case of Cu_2. R shadowed by a darker line as far as the base of the pterostigma. An elongate pale area of membrane occurs anterior to the apex of the areola postica, extending apically anterior to the median as far as the base of the fork giving rise to M_1 and M_2. The extent of this pale area varies somewhat from one specimen to another. Certain other ill-defined areas of the membrane may be paler. R_1 is almost colourless at its extremity and for a quarter of its length between its junction with the costa and the hind angle of the pterostigma. The costa is likewise colourless at this junction and a little on either side of it. The impression given is that the wing appears to be slit along a quarter of the apical margin of the pterostigma. The apical section of Sc is also colourless, giving a similar impression, at the base of the pterostigma.

Hind-wing with the membrane fumose, veins darker than those of the fore-wing in general. Cu_2 bordered by transparent membrane.

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The abdomen is uniformly pale brown above, very pale below, but slightly darker at the base. Terminalia dark brown.

Morphology. Length of body (in alcohol) 2.8 mm. Head with vertex very sharp, a distinct depression at the epicranial suture dividing the crest into two lobes. These lobes carry a few short, erect setae. Frons and postclypeus sparsely clothed with hairs. Frons almost flat, postclypeus but slightly swollen. Eyes moderately large, hemispherical.

$$\frac{\text{I.O.}}{\text{D}} \quad \text{(Badonnel)} = 1.4$$

$$\frac{\text{I.O.}}{\text{D}} \quad \text{(Pearman)} = 1.6$$

The antennae are clothed with hairs and have a total length of 3.6 mm. Ratios of lengths of antennal segments to that of the first flagellar segment are as follows: 0.16: 0.17: 1.0: 0.82: 0.62: 0.59: 0.33: 0.33: 0.30: 0.27: 0.23: 0.23: 0.26. The mandibles (fig. 3) are robust, the molar area being stout and striated. The maxilla has the lacinia broadened in the distal half, narrowing in the final quarter of its length. The apex carries no prominent teeth.

The pale prothorax is completely hidden when viewed from above, the anterior margin of the mesothorax approaching the head when the latter is raised.

The wings are held in a more nearly horizontal plane than is usual in the order. Towards the apex the fore-wings are bent down and slightly inwards across the apex of the abdomen. The bend in the fore-wing occurs along a line from the base of the pterostigma to a point on the hind margin of the wing just proximal to that at which Cu_1 ends. This bending gives a general beetle-like appearance to the insect in life. Length of fore-wing 3.5 mm. Wing length: Antenna length = 0.96: 1. Venation of fore-wings as figured (fig. 1). Veins (except Cu_2) and wing margin hairy, the veins having the hairs in a single row. Pterostigma relatively short and wide, sharply angulate behind, the angle bearing a very small spur. This spur varies in length from one specimen to another, one paratype specimen having a very long spur in one wing and a short one in the other. Pterostigma sparsely hairy. Wing membrane with microtrichia throughout. Rs and M fused for a short length, the length of fusion varying from specimen to specimen. Beyond this fusion Rs distinctly sinuate, R_{2+3} running sharply towards the anterior margin of the wing.

Hind-wings bent as fore-wings. M and Rs fused for a short length. M unbranched. Veins without setae, membrane with microtrichia.

Metathoracic leg measurements: Length of femur 0.78 mm.; tibia 1.25 mm.; first tarsal joint 0.42 mm.; second tarsal joint 0.15 mm. Claws untoothed, with a strong basal spine. Pulvillus membranous.

Male genitalia: Aedeagus and parameres as figured (fig. 2) (This structure is symmetrical *in situ*).

The epiproct (fig. 4) has a field of papillae surrounded by setae. The

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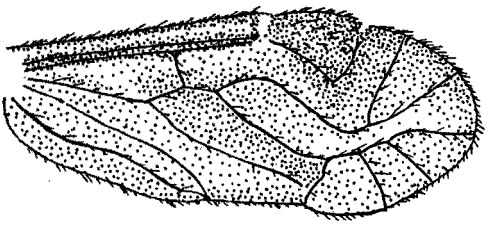

Fig. 1. Right fore-wing.

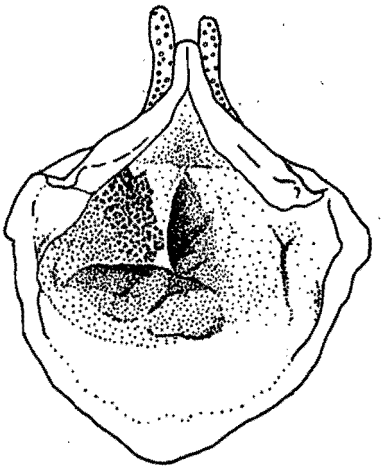

Fig. 2. Male genitalia.

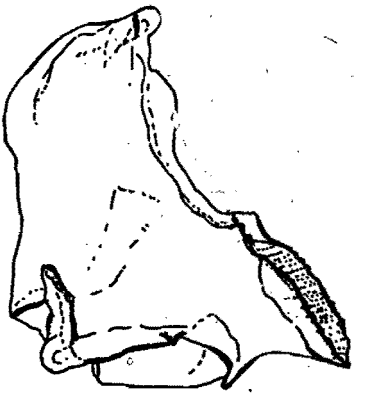

Fig. 3. Mandible.

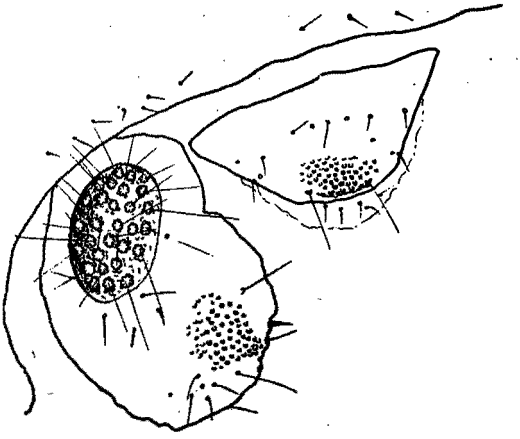

Fig. 4. Epiproct and paraproct.

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paraproct (fig. 4) carries a field of papillae, and a field of about 29 trichobothria. These are irregularly placed, the cuticle between the trichobothria being sculptured in a polygonal design. Marginal setae are prominent. Hypandrium simple, with dispersed setae.

Material and comparisons. The material upon which the present species is based is as follows: Holotype: 1♂ from St. Helier, Natal, South Africa, 31.v.55, collected by the author. Paratypes: 4 ♂♂ from Umtentweni, Natal, July, 1955, collected by Mr. A. L. Capener. (Unfortunately none of the paratype specimens has complete antennae.)

Distribution of material: Holotype: (dissected) in the author's collection, Paratypes: These will be deposited in the British Museum, the Congo Museum, Tervuren, the U.S. National Museum, and the author's collection.

Banks (1937, p. 256) included two species in his genus *Isophanes*, namely, *I. decipiens*, the type species, and *I. palliatus* (Hagen). The present species may be distinguished from *I. palliatus* by its larger size (it is of the same order of size as *I. decipiens*) and by the very small spur to the hind angle of the pterostigma. The variation in size of the spur, however, makes it unreliable as a diagnostic character when taken alone. *I. capeneri* may be distinguished from *I. decipiens* by the darker colour of the head and thorax, the presence of at least a small spur to the pterostigma, and by the shape of the discoidal cell, which, in *I. decipiens*, is narrower at the proximal than the distal end (Banks, 1937, plate 3, fig. 30), whereas in *I. capeneri* the reverse is the case.

This species is named in honour of Mr. A. L. Capener, who collected the paratype specimens.

Acknowledgement: Thanks are due to the Director and Staff of the Natal Museum for kindly providing facilities for the study of the Psocoptera.

Reference.

BANKS, N. 1937. Neuropteroid Insects from Formosa. *Phil. J. Sci.* **62**: 255-293. 3 plates.

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